

IN THE CLAIMS:

Please amend the claims as follows:

1. (currently amended) A device for limiting the reproducibility of information, comprising:

a substrate; and

a holographic element coupled to the substrate, the holographic element having at least one holographic layer, the at least one holographic layer including within substantially the entire planar area defined by the holographic element a first set of optical information in a first coded pattern and including in or on one or more portions of the holographic element a second set of optical information in a second coded pattern, wherein each of the first set of optical information and the second set of optical information represents a pattern of light.

2. (currently amended) The device according to claim 1, wherein each of the first coded pattern and the second coded pattern are determined using a single algorithm.

3. (currently amended) The device according to claim 1, wherein each of the first coded pattern and the second coded pattern are determined using independent algorithms.

4. (currently amended) A system for authentication of information, comprising:

a holographic element, the holographic element having at least one holographic layer, the at least one holographic layer including within substantially the entire planar area defined by the holographic element a first set of optical information in a first coded pattern and including in or on one or more portions of the holographic element a second set of optical information in a second coded pattern, wherein each of the first set of optical information and the second set of optical information represents a pattern of light; and

a reader, including

an opening aperture, for positioning of the aperture defining a location at which the reader can accomplish a reading of the holographic element,

a light source,

a first detector positioned at a first predetermined distance from the location of location relative to the holographic element when the holographic element is opening at the location, and

a second detector positioned at a second ~~predetermined distance from the location of~~ ~~location relative to~~ the holographic element when the holographic element is positioned in the opening at the location.

5. (currently amended) The system according to claim 4, wherein the reader further ~~includes~~ ~~comprises~~ a microprocessor coupled to the light source, the first detector and the second detector.

6. (currently amended) The system according to claim 4, wherein the first detector is ~~comprised of~~ ~~comprises~~ a first array of detectors and the second detector is ~~comprised of~~ ~~comprises~~ a second array of detectors.

7. (new) The device according to claim 1, wherein the first set of optical information is embedded throughout the holographic element using a photolithographic process.

8. (new) The device according to claim 1, wherein the second set of optical information is included on the holographic element using a printing process.

9. (new) The device according to claim 1, wherein the second set of optical information is included on the holographic element using a solvent based surface deformation process.

10. (new) The device according to claim 1, wherein the second set of optical information is included in the holographic element using laser disruption of a volume of the holographic element.

11. (new) The device according to claim 1, wherein the second set of optical information is included in the holographic element using a photolithographic process.

12. (new) The device according to claim 1, wherein the pattern of light forms a recognizable image.

13. (new) The device according to claim 1, wherein the pattern of light forms an abstract image.
14. (new) The system according to claim 4, wherein the aperture is defined by a slot through which the holographic element is passed.
15. (new) The system according to claim 4, wherein the aperture is defined by a slot into which the holographic element is inserted.
16. (new) The system according to claim 4, wherein the aperture is defined by a window positioned proximate to the holographic element.
17. (new) The system according to claim 4, wherein the location is defined by a predetermined range of distances and orientations.
18. (new) The system according to claim 4, wherein the first location is defined by a first distance and a first orientation.
19. (new) The system according to claim 4, wherein the second location is defined by a second distance and a second orientation.
20. (new) A method for authenticating information, comprising:
positioning a holographic element and a reader one relative to the other, the holographic element comprising a first set of optical information in a first coded pattern within substantially the entire planar area defined by the holographic element and a second set of optical information in a second coded pattern in or on one or more portions of the holographic element, wherein each of the first set of optical information and the second set of optical information represents a pattern of light, and the reader comprising an aperture, the aperture defining a location at which the reader can accomplish a reading of the holographic element, a light source, a first detector positioned at a first location relative to the holographic element when the holographic element is at the location, and a second detector positioned at a

second location relative to the holographic element when the holographic element is at the location;

reading the first set of optical information and the second set of optical information;
analyzing the first set of optical information relative to the second set of optical information; and
outputting a signal representing a result of the analysis.